DOCUMENT RESUME

ED 111 316 HE 006 799

AUTHOR Durkee, Frank M.; And Others
TITLE Some Alternatives in State Financing of Higher Education in Pennsylvania.
PUB DATE Jun 72
NOTE 26p.

EDRS PRICE MF-$0.76 HC-$1.95 Plus Postage
DESCRIPTORS Accelerated Programs; Decision Making; Educational Administration; *Educational Alternatives; *Educational Finance; Faculty Evaluation; Financial Policy; *Higher Education; Money Management; Public Education; *State Aid; *Student Loan Programs; Tuition
IDENTIFIERS *Pennsylvania

ABSTRACT

The strategic deployment of state funds is suggested to support changes in higher education to increase faculty productivity and to promote such changes as the adoption of the Carnegie Commission on Higher Education suggestions for less time for degrees (e.g., the three-year bachelor's degree). The use of contracts for services from private higher education institutions in the various states is reviewed as a more feasible procedure than the continuous expansion of public higher education facilities. A correlation is shown between mounting tuition and fees in the private sector and its declining proportion of the total college enrollment. A system for eliminating tuition subsidies and the effects of below cost tuition is examined. The study suggests that an alternative to per student aid is the New York system of aid on the basis of earned degrees produced by the institution. Assisting colleges in forming consortia not only by state leadership but by providing full-time coordinators to promote maximum utilization of resources within each consortium is suggested by the study as another alternative in financing higher education. (Author/LBH)

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SOME ALTERNATIVES IN STATE FINANCING OF HIGHER EDUCATION IN PENNSYLVANIA

by

Frank M. Durkee
Educational Research Associate

Commonwealth of Pennsylvania
Milton J. Shapp, Governor

Department of Education
John C. Pittenger, Secretary
Neal V. Musmanno, Deputy Secretary

Office of Higher Education
Warren E. Ringler, Acting Deputy
Secretary and Commissioner

Bureau of Higher Education Planning
James A. Bolden, Director

Bureau of Educational Research
Robert B. Hayes, Director

Division of Higher Education Research
Frank M. Durkee, Director

June 1972

TABLE OF CONTENTS

LIST OF TABLES

LIST FIGURES

SUMMARY

This study offers some alternatives in higher education financing which the Commonwealth can utilize to achieve optimum results from the higher education dollar.

It suggests the strategic deployment of state funds to support changes in higher education to increase faculty productivity and to promote such changes as the adoption of the Carnegie Commission on Higher Education suggestions for less time for degrees, such as the three-year bachelor's degree.

The study reviews the use of contracts for services from private higher education institutions in the various states as a more feasible procedure than the continuous expansion of public higher education facilities. It shows the relation between mounting tuition and fees in the private sector of higher education and its declining proportion of the total college enrollment. It examines a system for eliminating tuition subsidies and the effects of below cost tuition. It suggests that an alternative to per student aid is the New York system of aid on the basis of earned degrees produced by the institution.

Assisting colleges in forming consortia not only by state leadership but by providing full-time coordinators to promote maximum utilization of resources within each consortium is suggested by the study as another alternative in financing higher education.

SOME ALTERNATIVES IN STATE FINANCING OF HIGHER EDUCATION IN PENNSYLVANIA

The purpose of this study is to present some of the apparently constitutional alternatives for financing of higher education.

It is assumed that the goal in state financing of higher education is to assure optimum higher education for youth in the Commonwealth by (1) optimum use of the total higher education establishment and (2) optimum educational productivity from available resources.

The state financing of higher education is thus seen not alone in terms of dollars, important as they are, but in terms of the most strategic deployment of dollars and other resources to achieve goals, which is the essence of planning.

State Financial Aid to Promote Increased Productivity

If the use of state appropriations for higher education is to be increasingly productive in meeting the needs of students through optimum utilization of resources, financial aid will have to be directed toward specific objectives, not merely the support of the status quo in operations.

If state aid to higher education were directed toward producing optimum utilization of faculty manpower in the educational process, the resulting increased efficiency could make it possible to meet the needs of many more students even in terms of the present deployment of resources. Can the college, then, "find ways to increase productivity per man-hour as labor and other costs rise"?[1]

While many colleges have faculty-student ratio of 1 to 7 or 1 to 9, Antioch College has had for years a 1 to 19 ratio. Antioch uses a quarter-system calendar and students spend alternate quarters away from the campus on jobs. Considering the number of students per faculty member per year, Antioch is able to have 19 tuition-producing students per year per teacher. Work study and independent study programs make it possible for instruction to be improved at the same time that the number of students per faculty member is increased on an annual basis.

It is conceivable that state support of higher education in Pennsylvania could be structured so that some of it would be provided as an incentive to increase faculty productivity, making the institution more self-supporting and providing at the same time better education.

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[1]Keeton, Morris T. Models and Mavericks. Sponsored Research Report of the Carnegie Commission on Higher Education, New York: McGraw-Hill Book Company, 1971, p. 65ff.

Keeton[2] asserts, "I nevertheless believe that it is entirely feasible to achieve a 1 to 30 faculty-student ratio and still maintain an excellent instructional program."

Dr. John R. Silber, president of Boston University, in his presentation at Dickinson College, Carlisle, Pa., January 20, 1972, appropriately said, talking in terms of survival of private colleges and universities as well as effectiveness, "The steady drop in teaching loads and the precipitous decline in the number of contact hours between students and faculty must be reversed."

Deployment of Financial Aid to Support Change in Higher Education, Such as the Three-Year Baccalaureate Program or the Six-Year Medical Program

To encourage change to the three-year baccalaureate programs, the Carnegie Corporation of New York granted $343,760 to New York State University. President Alan Pifer, Carnegie Corporation, said these programs "will test the proposition that less time in college can produce both needed curricular reform and major cost savings." The 120-credit hour academic experience would be replaced by three academic years--90 credit hours--96 weeks' duration.

The Albany campus will accept 12th graders as freshmen. Brockport will reduce credit hours. Genesco campus will permit students to earn credit hours by taking advancement or proficiency examinations.

John Hopkins University plans to reduce its medical degree from eight to six years. The last two years would emphasize apprenticeships programs.[3]

Deployment of some part of state financial aid to institutions of higher education to promote the shortening of the length of time a student must spend in formal education may reduce attrition and increase success of students in getting the kind of education they need. Presently, six out of ten students enrolling for higher education fail to get the degree to which they aspire, a dropout rate of about 60 per cent.[4] Table 1 gives the usual pattern of higher education success and attrition.

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[2] Ibid.

[3] Education-Training Market Report, January 7, 1972, p. 2.

[4] Less Time, More Options--Education Beyond the High School, Carnegie Commission on Higher Education, McGraw-Hill Book Company, New York, January 1971, p. 9.

Table 1

Model of Success and Attrition in American Colleges and Universities by Per Cent of Entering Students

	Entering	Terminating before securing degree	Securing degree	Securing degree and terminating
Entering college	100			
Undergraduate attrition		47		
Earning bachelor's			53	
Terminating education				23
Entering graduate school*	30			
Master's attrition		11		
Earning master's			19	
Terminating education				11
Entering doctoral program	8			
Doctor's attrition		4		
Earning doctor's			4	
Terminating education				4
TOTAL		62		38

*Includes students entering for first-professional degrees.

The Carnegie Commission on Higher Education reported, "The length of time spent in undergraduate college education can be reduced roughly by one-fourth without sacrificing educational quality,"[5] and indicated ways of shortening all programs as shown in Table 2. The Commission recommends reducing the time for the associate degree by one-half year. It would reduce the time for a bachelor's degree (with a four-year option) to three years and cited Britain as an example of its extensive use. It would make the master of arts degree available in four years, a reduction of a year from current practice. It would accelerate the time for the Ph.D. degree by two to three years and would have medical doctors complete courses in seven years with an option of six, saving one to two years.

[5]Ibid., p. 1.

Table 2

Degree Structures--Current and Proposed[6]

Current		Proposed		
Years	Degree		Years	Degree
2	Associate in Arts (community colleges only)		2(1 or 1 1/2)*	Associate in Arts (available in all colleges)
		Later:	1 or 1 1/2(2)	
4	Bachelor of Arts		4(3)	Bachelor of Arts
		Later:	3(4)	
5	Master of Arts		5(4)	Master of Arts
		Later:	4(5)	
			6(5)	Master of Philosophy
		Later:	5(6)	
8-10 or more**	Ph.D.		8(7)	Doctor of Arts and Ph.D. (as specialist degree)
		Later:	7(8)	
			7(6)	M.D.
8	M.D.	Later:	6(7)	
			10(9)	Completion of residency
12	Completion of residency for Medical Doctors	Later:	9(10)	
Short-term	Certificate (community colleges only)	Short-term		Certificate (available in all colleges)

*Figures in parentheses show options to be available--thus "3(4)" means a normal three-year degree with a four-year option.

**Averages of total elapsed years from B.A. degree to Ph.D. are 5 to 15 years, or 9 to 19 years after the high school degree.

[6] Ibid., p. 22.

In the same time-shortening process for degrees and certificates, the Carnegie Commission suggested that the 1,600 current types of degrees be reduced to not more than 160, and affirmed,"....our proposed reforms will result in savings to both the individual and the institution."[7]

The needed changes in higher education, documented by the Carnegie Commission on Higher Education, will take place slowly in an evolutionary process, but the state can speed the process and achieve optimum results for institutions and students by providing financial aid incentives for those innovative and constructive changes.

Financial Aid to Higher Education by Contracts for Programs and Services--Review of the States[8]

Contracting for services has been a widespread practice among the states in areas such as health and welfare, and recently it is coming into use in higher education.

Alaska in June 1970 provided that the Higher Education Commission should "enter into contractual agreements with accredited privately sponsored institutions of higher education in Alaska for provision of educational services to Alaska residents. Payments under the contractual agreements shall include (1) full tuition and required fees by the institution for each student less charges made for the same items at the University of Alaska or Appropriate Community College and (2) an amount of $250 a semester for each full-time student and a pro rata amount for each part-time student. Exceptions: "No payment may be made for any course in sectarian religion or partisan politics under a contract made under Section 900 of this Chapter."

Thus, Alaska provides for payment of the tuition differential between the public and private institutions plus a flat sum of $500 per year per student.

Connecticut contracts with private higher education institutions for student spaces. Payment may be as high as 125 per cent of tuition but not greater than the tuition cost in public higher education institutions. The recipient institution must also agree to increase enrollment of state residents and to use 80 per cent of state money received for the enrollment increase to aid students. The 1972 legislature provided that aid would be on the basis of all Connecticut students enrolled, not just for annual enrollment increases. The legislature also passed a new law, left unfunded, to allow the Commission for Higher Education to contract with the private sector for "programs, facilities and services."[9]

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[7]Ibid.

[8]Smith, Elden T. A Survey of State Programs of Aid to Independent Colleges and Universities and Their Students. National Council of Independent Colleges and Universities, Washington, D.C., 50ff.

[9]Chronicle of Higher Education, June 5, 1972, p. 3.

Massachusetts is considering a proposal to contract for student spaces in the private higher education institutions.

Michigan began contracting for services with dental schools (1969), providing payment for each resident degree in dental surgery or dental medicine, $2,400. It is now considering extension of the concept for various health professions.

Minnesota makes "private college contracts" by which it pays $500 to four-year institutions of higher education for each student in approved programs in excess of 1970 enrollment, and $400 to two-year colleges; for each low-income student qualified for grant-in-aid, an additional $500.

Missouri Legislature is considering a bill to provide $4,000 per year for each Missouri resident student at private medical schools in state, but such schools must reduce their tuition to that of the state medical school.

New Jersey State Board of Higher Education has asked the Governor and Legislature for $7 million to be used in a contract system for "specific educational services" from private colleges. Under the "State Program for Utilization of Resources" (SPUR), a college could receive $600 for every additional full-time New Jersey resident enrolled as a student next year over and above this year's comparable enrollment. In addition, it could receive $175 for all underclassmen already enrolled and $225 for juniors and seniors.

Under College Opportunity Grants (COG), a college would receive $300 for every full-time New Jersey undergraduate who was a recipient of either state financial aid (excluding loans) or a grant from his private college.

Only accredited colleges with at least 500 full-time undergraduates would be eligible for a contract, except for single-purpose professional schools. None of the money would be used for institutions primarily dedicated to preparing students for the ministry or religious life.[10]

New York, in a medical-dental expansion program, beginning in 1966, provided $6,000 for each medical student by which a class is increased up to 25, or up to 100 per school; $3,000 for each dental student in the program. In an expansion of nursing program (1966), for each additional student enrolled; in community college, $300; in private college, $1,000; in hospital diploma program, $3,000; in baccalaureate programs, $2,500.

In 1970 New York offered contracts for medical education to non-public medical colleges: $1,500 to the institution for each full-time student in a degree program (cost $3.6 million).

New York also contracts with private higher education institutions to pay for the number of graduates of previous year, presently at $400 for each bachelor's or master's and $2,400 for each doctorate.

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[10]"Private Colleges Seek State Dollars," NJEA Review, February 1972, p. 43.

North Carolina Senate Bill 732 "allows private higher education institutions to contract for and administer scholarships for needy North Carolina students."

House Bill 780 provides for contracting for student spaces in private institutions of higher education.

Senate Bill 74 provides $1.2 million to educate residents at private schools of medicine at Duke University and Wake Forest University.

Ohio is considering contracting for services with private higher education institutions, as documented in a study completed, January 1971, by the Academy for Educational Development for the Association of Independent Colleges and Universities.

Oregon contracts for services with private higher education institutions for secular education, paying at the rate of $250 for every 45 "quarter hours" or equivalent completed; in effect, $1,000 for each student completing four years of college. Presently, a Senate Joint Resolution amends the constitution to authorize the use of money by church-affiliated and private institutions of higher education after a referendum.

South Carolina contracts for teacher training at private colleges (cost in 1971-72, $200,000). It reimburses for practice teaching at private institutions of higher education (current year, $100,000).

Tennessee is considering a proposal to contract for medical education with Meharry and Vanderbilt instead of building a new medical school.

Texas Legislature considered a bill to contract for educational services but it failed to pass.

Virginia supports teacher education, nursing and medical programs with loans and scholarships, with forgiveness where recipient stays in the state.

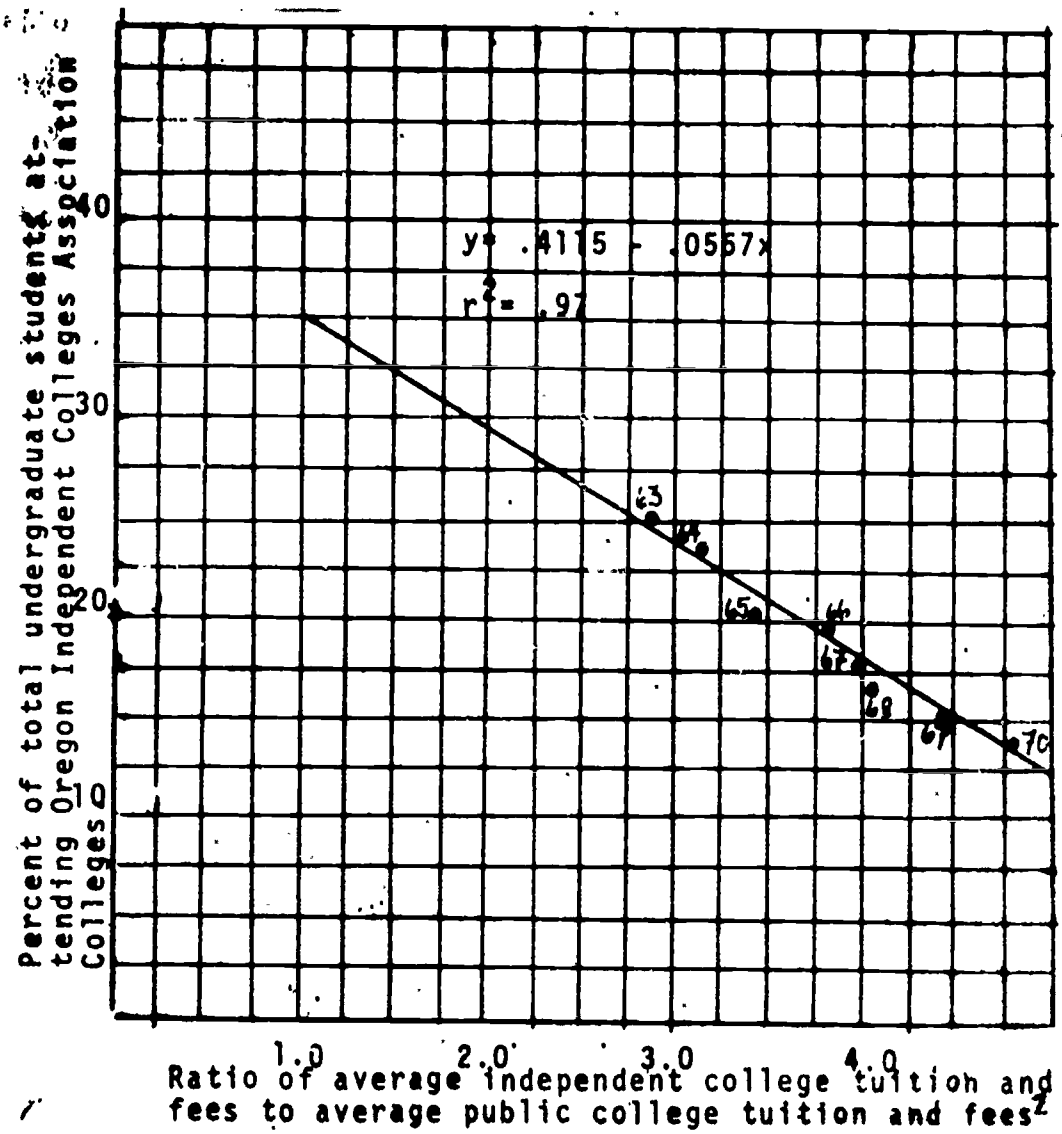
Washington Legislature considered a bill to contract for services from private institutions of higher education. Bill passed in the House but failed in the Senate. Bills to contract for nursing and law education died in the House Appropriations Committee.

Wisconsin contracts for medical education with the private Marquette University ($3.8 million).

The need for action to maintain the higher educational system in a viable condition is affirmed by the previously summarized actions of the various states to contract with the private sector for services. Such actions are being taken not alone on the basis of pleas from private colleges, but basically because the enrollment and tuition trends project the financial failure of a large proportion of the private colleges, thus, imposing an even greater higher education burden on the various state budgets.

Figure 1

A TIME SERIES CHART (1963-64 to 1970-71) RELATING PER CENT OF STUDENTS IN OREGON INDEPENDENT COLLEGES TO THE TUITION AND FEE DIFFERENTIAL BETWEEN GOVERNMENT SUPPORTED COLLEGES AND THE INDEPENDENT COLLEGES[1]



[1] This graph is from Issues of Grants and Loans to Individuals, Oregon as a Case Study, Consumer Research Center, College of Business Administration, University of Oregon, Eugene, 1971, pp. III-21.

[2] Where 1.0 indicates equal tuition and fees at independent and public colleges; 2.0 indicates the tuition and fees at the independent colleges are twice those of public colleges; etc.

Moving Toward True-Cost Tuition and Fees

Figure 1 presents a study of the per cent of enrollment in public and private colleges in Oregon as related to average per student tuition and fees for the 1963-64 to 1970-71 period. It graphically illustrates the cause of private college alarm and the efficient cause, namely, low tuition and fees at the public colleges. The graph shows that as tuition and fees increased at the independent colleges, their proportion of the total enrollment decreased. Thus, in 1970-71 the independent colleges had per student tuition and fees 4.83 times that of the public colleges and enrolled only 14.42 per cent of the total number of college students as compared with 24 per cent in 1963. A least squares regression analysis indicated that 97 per cent of the decline in the proportion of enrollment could be explained by the differences in tuition and fees in the Oregon private colleges compared with the public colleges, including community colleges.

In Pennsylvania the public sector of higher education has not depressed the future of the private sector so much as has taken place in Oregon. Table 3 shows the average tuition and fees with the proportion of total enrollment in each sector.

Table 3

Tuition and Fees at Public and Private Colleges in Pennsylvania, 1965-66 to 1970-71*

Year	Average Tuition Fees Public	Change Over 1965	Average Tuition Fees Private	Change Over 1965	Per Cent Total Enroll-ment	Private/ Public Ratio Col.3/Col.1
	(1)	(2)	(3)	(4)	(5)	(6)
1965-66	$819	$	$ 918		55.0	1.12
1966-67	746	- 73	984	66	51.0	1.32
1967-68	657	- 162	1,074	156	48.0	1.63
1968-69	688	- 131	1,182	264	45.0	1.72
1969-70	800	- 19	1,290	372	44.0	1.61
1970-71	921	102	1,402	584	43.0	1.63

*Basic data are from Bureau of Educational Statistics publications, Pennsylvania Department of Education

While average tuition and fees per student in state supported higher education institutions decreased each year 1966-67 to 1969-70 and increased only $102 for 1970-71, in the private sector average tuition and fees increased each year, from $66 in 1966-67 to $584 in 1970-71. At the same time the proportion of total college enrollment in the private sector dropped 12 per cent in the five-year period.

A slowing of the trend of college enrollment away from the private sector began with the increase of average tuition and fees per student in the public sector. It is apparent then that the state can actually help

to preserve the position and viability of the private sector, not by appropriations of funds, but by the simple action of gradual increases of tuition and fees in the state system toward the level of true cost.

The matching financial alternative is to deploy more state funds through the Pennsylvania Higher Education Assistance Agency to assist those at the lower economic levels to pay the tuition and fees, whether they choose the public or private colleges.

Using Student Financial Need and Full Tuition in Allocating State Financial Aid to Higher Education

To get more education for more students for the state higher education dollar and to put the competition among state and private colleges and universities on a more viable basis for the total higher education community, some higher education finance authorities recommend the elimination of college tuition subsidies and setting the cost to the student according to his financial resources.

Hansen and Weisbrod have developed such a proposal, calling it the higher education opportunity program.[11] This proposal is based on the "standard student budget" and the ability of a given family to pay student college costs.

The "student standard budget" would be used as the allocation device instead of a tuition base. It would include: (a) full instructional costs: (1) direct costs of faculty and staff and (2) indirect instructional costs of libraries, utilities, administration, college maintenance, use of land and buildings, etc., and (b) student costs, such as books, supplies and student maintenance (possible loss to family income caused by student going to college) using average costs in calculations.

Family ability to pay college costs would be determined by a needs analysis, such as the American College Testing Program or the College Scholarship Service, including such items as student savings, expected summer earnings, parental income for previous year, parental net worth, family size and other special considerations--large medical expenses, scholarships and grants. Loans and part-time work would not be included.

The state grant would equal the "student standard budget" minus the family-student contribution. Only full-time students would be eligible, and a given college could set its tuition above the instructional costs included in the "student family budget."

In their estimates Hansen and Weisbrod used 1969-70 Wisconsin higher education data. Average costs per academic year were: (1) full costs of undergraduate education (tuition), $1,400; (2) books and supplies, $100; and maintenance allowance, $600, making a total student standard budget of $2,100. Average summer earning for students was determined to be $350.

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[11] Hansen, W. Lee and Burton A. Weisbrod. A New Approach to Higher Education Finance. American College Testing Program, Iowa City, Iowa, 1971.

Examples of the application of the proposal follow:

a. Family--$5,000 income, no net worth, no family contribution to college costs, three children: college costs--$2,100 - $350 student earnings = $1,750 grant from state. The student's gains = present cost of tuition--$450 + $350 of his earnings or $800.

b. Family--$20,000 income, average net worth, three children:

Parental contribution	$2,250
Average student savings	150
Average student summer earnings	350
	$2,750

Family ability to pay--$2,750 - college costs of $2,100 = $650 above the "student standard budget," making the student ineligible for state aid. His tuition would be the full amount--$1,400, and he would be $950 worse off under the proposed system ($1,400 - $450 present tuition).

For students from families in $8,500 income category and down, this plan would provide substantial gains. For the $10,000 income group, the increased cost would be $ 0; for $12,500 income, the increase would be $950. Thirty-five per cent of the families would gain, 20 per cent would pay as under present system and 45 per cent of the families would pay $500 to $950 more per year. Table 4 indicates the costs and savings to the Wisconsin State budget as an example.

This financing proposal would be phased in over a period of four years by raising tuition by annual increments to the full cost level. During the transition period the state would make appropriations for student grants. Appropriations to higher education institutions would at the same time be phased out and would end as the student-grant program became fully effective. Students at both public and private higher education institutions would participate in the program.

Tuition Below Cost

Often educators and legislators maintain that keeping tuition below cost increases the number of students who can attend college. Actually, the decrease in tuition at four-year colleges attracts more students from relatively high income families than from relatively low-income families. This is seen in Figures 2, 2a and 2b, which show the percentage of change in enrollment proportions according to student choices of high school 10th graders in the indicated test score percentiles and family income categories. Figure 2 shows that an increase of $100 in tuition at four-year public higher education institutions would result, for example, in a 2 per cent decrease in enrollment of male students, percentiles 0-50 and family income $11,000, and a 7 per cent decrease for $17,000 family income and same percentile range. The decrease in enrollment would be 5.5 per cent for percentiles 71-85 and $11,000 family income and 7 per cent at the $13,000 family income level.

TABLE 4

Annual State Budgetary Cost of Higher Education
Hansen-Weisbrod Undergraduate Post-Secondary
Education Financing Proposal for Wisconsin 1969-70[12]
(in Millions of Dollars)

Costs and savings to state budget	Based on 1969-70 FTE enrollments (1)	Based on additional enrollment[c] (2)	Total (1) & (2) (3)
1. Cost of grants to students who cannot afford to pay standard cost[a]	$85.	$ 5.1 to 10.2	$90.1 to 95.2
2. Savings in appropriations now made to support postsecondary education[b]			
-Institutional subsidies (UW & WSU)	93.3	-	93.3
-State aids to vocational schools	8.8	-	8.8
-State scholarships	6.2	-	6.2
-State payments for capital amortization	15.0	-	15.0
	$123.3		$123.3
3. Net Cost (-) or savings (+) to state	+$ 38.3	-$ 5.1 to- 10.2	+$ 28.1 to 33.2

[a]Based on an estimated standard full cost of $2,100 ($1,400 full cost tuition, $100 books and supplies, and $600 living allowance). It is assumed that the contribution rate of federal and local governments to the Vocational and Technical School System will continue at present levels; the continuance of these nonstate instructional subsidies reduces the full cost and hence the tuition paid by students attending vocational and technical schools.

[b]Estimated on the basis of data supplied by the Department of Administration, State of Wisconsin.

[c]Based on the assumption that 3,000 to 6,000 additional lower income students will enroll after the plan goes into full operation, and that the maximum grant is paid to each student.

[12]Ibid., p. 130.

Figure 2

The Estimated Effects of a $100 Increase in Tuition at Four-Year Public Institutions on Enrollment Proportions

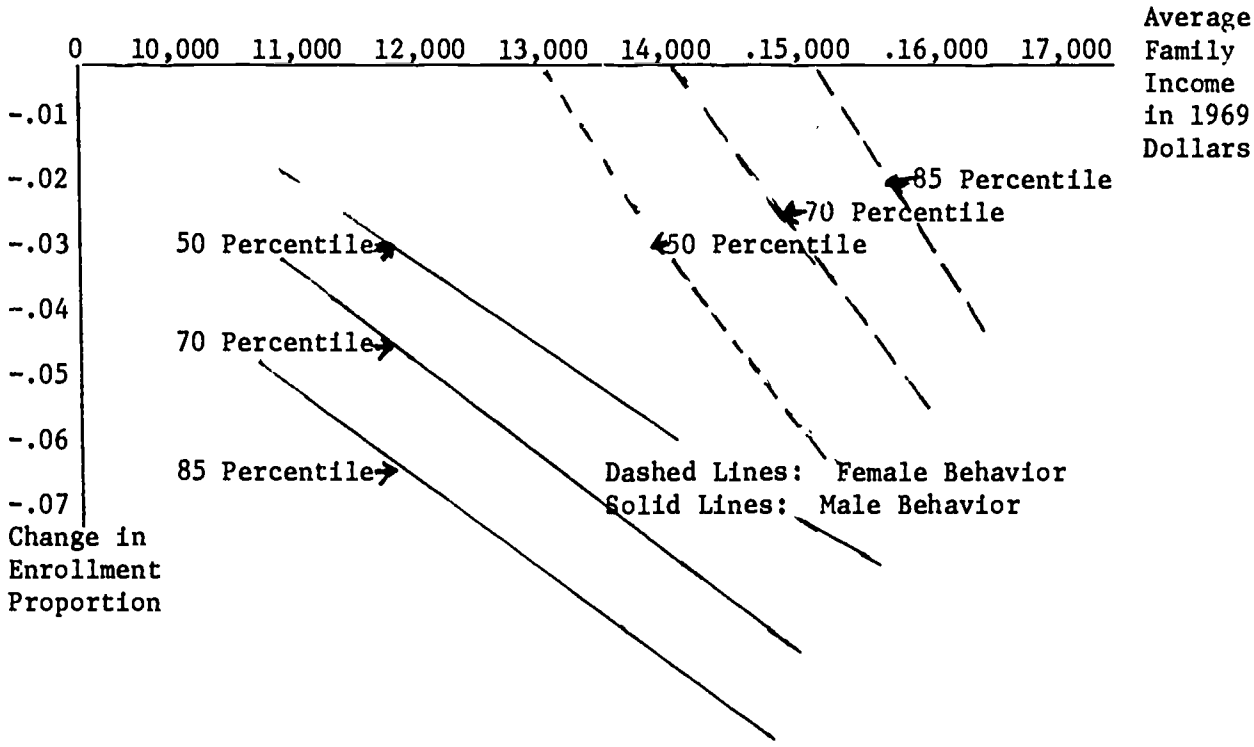


Figure 2a

The Estimated Effects of a $100 Increase in Tuition at Four-Year Private Institutions on Enrollment Proportions

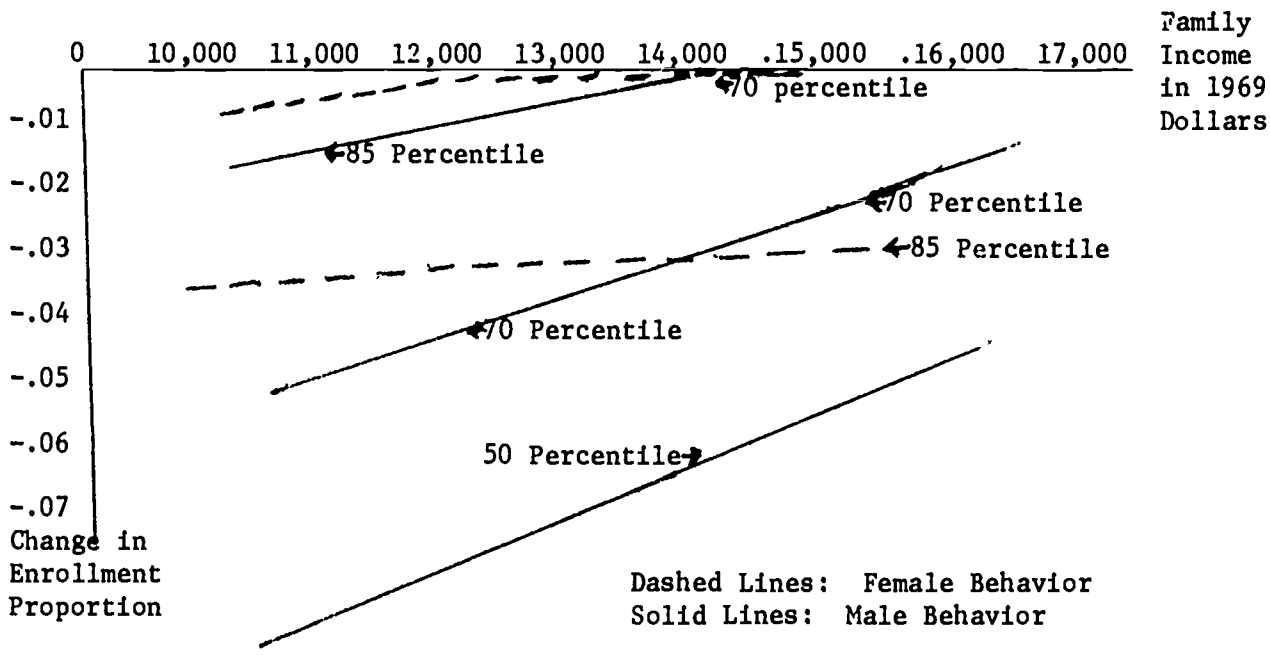
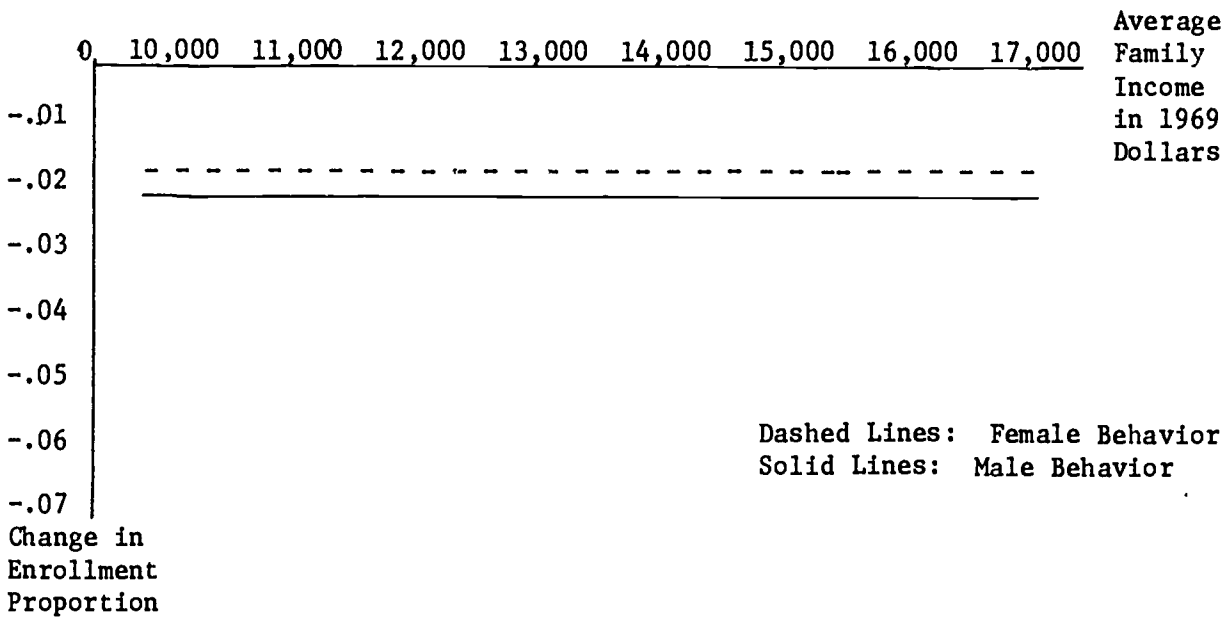


Figure 2b

The Estimated Effects of a $100 Increase in Tuition at Two-Year Institutions on Enrollment Proportions



(Source: The Economics of Financing Higher Education in the United States, Joint Economic Committee of Congress. U.S. Government Printing Office, Washington, D.C., 1969, p. 384ff.)

Increasing tuition by as little as $100, then, causes higher test score and higher family income students to choose public higher education institutions in decreasing proportions, enabling more low-income students to choose to go to college.

Figure 2a indicates the smaller effect of tuition changes on private four-year institutions. Figure 2b indicates the small effect of tuition changes on two-year colleges.

Thus, "If the objective is to bring more of the relatively low-income students into college, a policy of differentially pricing education for students of equal ability but different family income is more appropriate.[13]

Earned Degrees Conferred as Basis for State Financing

It was noted previously that New York State gives aid to private higher education institutions on the basis of earned degrees. This method, the Governor's Select Committee maintained, has an advantage over per-student calculations, for it puts the emphasis on productivity "as against sheer numbers of students" and avoids the difficulties in considering part-time and full-time students and degree credit.[14] The committee further found that aid to the student had "not materially aided the institutions," and that there was no indication that an increase of such aid would "flow through" to the institutions.[15]

Overview of Cost Reducing Practices in Higher Education

Quite apart from any state financial aid to institutions of higher education, there may be many ways by which the state can promote practices in higher education that would produce both lower unit costs and better education.

Seymour E. Harris[16] in discussing this problem stated:

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[13]Feldman, Paul and Stephen Hoenack. "Private Demand for Higher Education in the United States," in The Economics and Financing of Higher Education in the United States, Joint Economic Committee of Congress, Government Printing Office, Washington, D.C., 1969, p. 394.

[14]New York State and Private Higher Education, Select Committee on the Future of Private and Independent Higher Education, Board of Regents, State of New York, Albany, New York, 1968, p. 55.

[15]Ibid., p. 46.

[16]Harris, Seymour E. "Financing Higher Education: An Overview," in The Economics and Financing of Higher Education in the United States, Joint Economic Committee of Congress, Government Printing Office, Washington, D.C., 1969, p. 467ff.

The academic vice-president of Tulane University, Fred Cole, estimates that twelve-month operation would provide for 50 to 75 per cent additional students without a significant rise of capacity. Another expert found that a year-round schedule for the nation's IHE would increase degrees by 56 per cent a year, provide 30 per cent more instructional facilities, and make possible a 30 per cent rise of faculty salaries. At the University of Pennsylvania, a modernization of curriculum and facilities increased the capacity for engineering students by 50 per cent. Through a lengthening of the school year and reduction of duplication--e.g., largely concentrating chemistry in the medical schools--the Johns Hopkins Medical School expects to save the student two years, and of course utilize the capacity much more effectively. Western Reserve University has also experimented in its medical school to avoid duplication, increase independent work, and further integration of staff and materials. At Kenyon College it was estimated that an increased use of capacity by increasing enrollment by 80 would reduce the average deficit over several years from $56,000 to $23,000 to $32,000. A widespread practice of upgrading teachers colleges to liberal arts or even to complex colleges also increases capacity. Though in 1921 only 42 per cent of the 165 accredited degree-granting teachers colleges operated at the baccalaureate level, by 1959 only 38 per cent of 180 institutions primarily prepared teachers.

Harris suggested other changes in the higher education establishment, such as:

1. Use of an admissions clearinghouse for groups of colleges

2. More independent study by students and greater use of teaching assistants in roles for which they are qualified

3. Entirely self-supporting research contracts

4. Better cost accounting, and in the matter of joint-costs, the use of best judgment rather than be stymied by lack of complete data

5. Professional help with investments to increase annual income in the private sector

6. More recourse to efficiently operated annual giving programs in the private sector

7. Economizing in the area of auxiliary services

8. More institutional cooperation, as among the Associated Colleges of the Midwest, formation of consortia

9. Better use of planning within institutions and on a statewide basis

10. Larger classes and better use of plant

11. Size of institution and cost should be studied so that optimum cost-benefit can be achieved per student

12. The extraordinarily nigh cost of special programs, such as the doctoral in certain areas, considered and steps taken to achieve economical operation

13. Better space utilization through standards and studies

All of these proposals could contribute to more effective use of the higher education dollar.

Assisting Colleges to Form and Operate in Consortia

Better use of resources in higher education can often be attained through the formation and use of a consortium of colleges.

One of the better known examples of a consortium of colleges is Five Colleges, Inc., which includes Smith, Mount Holyoke, Amherst, Hampshire and the University of Massachusetts, all within six or seven miles of each other. This consortium, administered by a full-time coordinator, among other things, operates a radio station, a literary affairs review, a bus service among the colleges, extensive cross-registration of students, faculty interchange, a joint astronomy department and a research library.

The coordinator of Five College, Inc. consortium, North Burn, emphasizes joint planning and asserts: "Cooperation begins to have an impact on institutions when it affects academic offerings. Saving of faculty time is where the real value comes. Cooperative purchasing is peanuts in comparison."[17]

The Academy of Educational Development[18] reports that 700 colleges are participating in consortia and 65 groups have pooled teaching facilities and shared faculty. Pooling business management functions with a firm having access to computer services can produce savings as high as 57 per cent for each college. One large metropolitan consortium estimated that it saved as many as 100 teaching positions by pooling college courses. Eleven New Hampshire colleges formed a consortium to establish a marine science program that they could not

[17]Alderman, Jeffrey D. "The Consortium: Cooperation Can Pay Off," College Management, June 1972, p. 14.

[18]"Colleges Form Consortia, Cut Costs for All," Patriot News, Harrisburg, Pa., May 30, 1972.

otherwise have developed.

Besides offering leadership, the State could assist the higher education system by deploying funds for consortium coordinators and thus promote economy and quality in higher education without larger appropriations to colleges.

Potential Demand for Resources in Financing Higher Education

The predictions of needed resources for financing higher education (Table 5) indicates the necessity for using resources more effectively.

Table 5

Average Rates of Growth in Total Resource Use for All Educational Institutions, Using Constant 1968-69 Dollars, in Per Cent Per Year[19]

	1950* Expenditure Weights	1950's	1960's	1970's	1980's
Higher Education	.2	6.5	7.7	11.5	5.5
Elementary and Secondary	.8	7.8	6.4	3.9	5.5
All Formal Education	1.0	7.6	6.7	5.9	5.5

*The expenditure weights apply to the underlying growth ratios consistent with average ratios shown.

The percentage growth rates for higher education were derived by this formula: Persons 18-24 x average student years completed per person of college age (number of student years) x average number of staff units used per student-year x average constant $ expenditure per staff unit (including salary, material and current capital consumption).

The 11.5 per cent growth rate for resources required for higher education, 1970-80, is based on an average rate of growth in student years accommodated at 7.7 per cent per year, holding the average staff-student ratio constant at its 1970 level, and an increase in average expenditures per staff, including current capital cost, of 3.5 per cent per year.

Byrnes[20] estimates that if national real income continues to grow at its historical rate of 3.7 per cent per year, the nation can afford a 10.4 per cent per year growth in expenditures for post-secondary

[19]Byrnes, James C. "On Growth and Financing of Post-Secondary Education: Who Pays, Student or Taxpayer?" Notes on the Future of Education, Educational Policy Research Center, Syracuse, N.Y., 1971, p. 7ff.

[20]Ibid.

education. But even if his estimate were correct, the demand for higher education resources would exceed the growth rate of real national income by (11.5 - 10.4 = 1.1) by 1.1 per cent.

Unless there is much greater public support for higher education in the 1970's, as many needs compete for the tax dollar, the 11.5 per cent per year increase of resources allocated to higher education will not take place.

If some of the alternatives in state financing set forth in this report were successfully implemented, higher education productivity would increase and the predicted annual increase of 11.5 per cent in higher education costs would not be necessary. In addition, the predicted rate of increase in demand for resources in the 1980's of 5.5 per cent per year, as rate of growth in student population declines, would probably not materialize.

BIBLIOGRAPHY

Alderman, Jeffrey D. "The Consortium: Cooperation Can Pay Off," College Management, June 1972.

American Council on Education. College and University Business Administration, Washington, D.C., 1969.

Byrnes, James C. "On Growth and Financing of Post-Secondary Education: Who Pays, Student or Taxpayer?" Notes on the Future of Education, Educational Policy Research Center, Syracuse, N.Y., 1971.

Cavanaugh, Alfred D. A Preliminary Evaluation of Cost Studies in Higher Education, Berkeley, California: University of California, Office of Institutional Research, 1969.

Dressel, Paul L. and Associates. Institutional Research in the University: A Handbook, Washington, D.C.: Jossey-Bass Inc., Publishers, 1971.

Economics of Financing Higher Education in the United States. A Compendium of Papers Submitted to the Joint Economic Committee, Congress of the United States, Washington, D.C.: U.S. Government Printing Office, 1969:

"Criteria for Investment in Higher Education" by Neil Singer and Paul Feldman, p. 124ff.

"Equity versus Efficiency in Higher Education" by David Segal, p. 135ff.

"Exploration of the Determinants of Effectiveness in Higher Education" by Robert H. Berls, p. 207.

"Financing Higher Education: An Overview" by Seymour E. Harris, p. 467ff.

"Private Demand for Higher Education in the United States" by Paul Feldman and Stephen Hoenack, p. 375ff.

"The Search for Equity in the Provision and Finance of Higher Education by W. Lee Hansen and Burton A. Weisbrod, p. 107ff.

Education-Training Market Report, E.T.M., Inc., Washington, D.C., January 7, 1972.

Hanson, W. Lee and Burton A. Weisbrod. A New Approach to Higher Education Finance. American College Testing Program, Iowa City, Iowa, 1971.

Keeton, Morris T. Models and Mavericks. Report of the Carnegie Commission on Higher Education. New York: McGraw-Hill Book Company, 1971.

Less Time, More Options--Education Beyond High School. Carnegie Commission on Higher Eduation. New York: McGraw-Hill Book Company, January 1971.

BIBLIOGRAPHY
(Continued)

Newman, Frank, et al. Report on Higher Education. U.S. Department of Health, Education and Welfare, Washington, D.C., 1971.

"Private Colleges Seek State Dollars," NJEA Review, February 1972.

Russell, John Dale. The Finance of Higher Education. Chicago, Illinois: The University of Chicago Press, 1967.

Smith, Elden T. A Survey of State Programs of Aid to Independent Colleges and Universities. Washington, D.C., 1971.